Unfortunately, however, milk is a product which, naturally, varies much in quality. As a consequence there are difficulties, well known to those who administer the Sale of Food and Drugs Acts, in the way of preventing the manipulation mentioned. To avoid punishing the innocent some latitude must be allowed to the guilty—and the guilty take full advantage of it. It does not follow that less latitude should be given. Careful consideration will show that as regards the official "standards" by which milk is judged, the balance is held as evenly as is practicable between the consumer on the one hand and the producer on the other.

At the moment, what seems to be the most pressing question of milk supply is the matter of cleanliness. Whether the milk is genuine or whether it is watered, at least the introduction of filth ought not to be tolerated. Dirty byres, dirty cows, dirty hands; an atmosphere of dust and micro-organisms; tuberculous udders and uncleanly churns; these may each and all have a part in contaminating the foodstuff which, as Sir James puts it, "enters into the diet of a vast majority of the population, and forms the almost exclusive food of its most susceptible units." There is here a very real need for improvement. Nor does it appear certain that any new legislation is necessary. The Public Health Act and the Dairy, Cowsheds, and Milkshops Order would perhaps suffice as regards the machinery; but there is often local reluctance to put the machinery in motion.

In the matter of butter, to which Sir James devoted a part of his address, the hands of the authorities will be materially strengthened by the new Butter and Margarine Act. It was quite time. The chief malpractices to which this article of food is subjected were described some months ago in the columns of this journal (NATURE, vol. lxxiii., p. 466). One or two examples from the report of the principal chemist of the Government Laboratory may be cited to illustrate the recent history of the matter. During last year a creamery in this country was visited under the authority of a search-warrant, and the process of adulterating butter with lard was found in full swing on the premises. Other such places are known to use condensed milk for incorporation with butter. Again, an unscrupulous individual was found offering for sale a process for the "scientific" manipulation of butter by blending it with beef-fat or lard; and eventually he was indicted for inciting to commit a misdemeanour. He was sent for trial, but the Old Bailey never saw him; the authorities had to be content with estreating his bail for 800*l*.

As remedial measures Sir James Crichton Browne mentions provisions that were either previously existent or have been included in the Butter and Margarine Act of last session. The importer is held responsible for the genuineness of the butter he imports, and must find his remedy against the foreign producer. All butter factories must be registered, and be subject to inspection. Any oils or fats found that are capable of being used in the adulteration of butter are to be considered as intended to be so used unless the contrary is proved, and their presence constitutes an offence under the Act. Though not all that could be wished, the measure will be a valuable one in many respects, and should do much to check fraudulent manipulation of butter.

But a much more drastic and far-reaching enactment is just now coming into force in the United States, and the working of one of its provisions in particular will be watched with much interest in this country. Its effect is to ensure that articles of food and drugs shall be labelled so as to show the purchaser, within limits, exactly what the articles are. The description must not "be false or misleading in any particular," whether as to composition, quality, origin, or what not. Thus an article must be stated on the label to be "prepared with glucose," "coloured with sulphate of copper," "dyed with aniline dye," or to be "composed of fragments and scraps from a mushroom cannery," and so on, as the case may be. Moreover, in the case of certain drugs—morphia, cocaine, chloral, chloroform, and others—the proportions must always be stated on the label. If the preparation is found not to agree with the description it is deemed to be "misbranded," and offends against the Act. It is too early yet to say exactly what the effect of this compulsory candour will be, but obviously it affords a powerful means of enforcing commercial honesty. This, however, is not all that is being done. So long as a substance is left undefined, so long is it possible for a "trade custom" to be alleged in defence of malpractices. Witness, for instance, the discussions upon "what is whisky?" and "what is brandy?" which have recently arisen in this country. Hence the new American law is being supplemented by a series of schedules defining the various food products and fixing certain "standards" in respect of them. The appointment of a committee to draw up similar regulations for the United Kingdom has been urged, but at present little more has been done in the matter.

Another point of much importance touched upon by Sir J. Crichton Browne is the open or veiled antagonism of some local authorities to anything like reforming zeal on the part of their medical officers, analysts, and inspectors. The personal interests of influential councillors may clash with the public welfare, and an official may find his tenure but short if he becomes too zealous. How, it is asked, can a public official act impartially if the fearless performance of his duty brings him into the position of having to prosecute his employers?

"Vice," says Sir James, "is mind in the wrong place." Perhaps our present system of local government often puts men in the wrong place.

C. SIMMONDS.

SCIENTIFIC WORK IN INDIA.

THE Asiatic Society of Bengal continues to make satisfactory progress, its membership having increased from 343 in 1904 to 407 in 1906. In his annual address for the latter year the president, Sir A. Frazer, Lieutenant Governor of the Province, expressed his disappointment that so few civilians and members of other services have joined the society. He suggested that the society did not make itself sufficiently known; that the increasing use of English in Bengal discourages the use of the vernacular tongues; but he chiefly attributes the lack of official interest in the work to what he calls "the prevalence of mere officialism." He therefore proposes to appoint a joint committee of savants and officials to investigate the question, and to endeavour to bring about more satisfactory relations between the society and the services.

It is well that the attention of the authorities has been directed to this important subject. Such a committee is, however, hardly likely to throw much new light on the matter. The causes enumerated by the president have no doubt tended to increase the prevailing indifference felt by Indian officials to scientific inquiry and the study of the people, their languages, superstitions, and beliefs. But, in spite of the cheerful optimism of the Lieutenant Governor, the causes of this failure lie nearer home than he would be disposed to admit. All services naturally take their tone from their leaders, and, as a matter of fact, the Indian Government has always regarded

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investigations, scientific or literary, beyond the immediate range of official routine, with some degree of suspicion. They claim all the time and powers of mind which their servants possess for their own special work; they have hitherto been unable fully to realise the value of a personal knowledge of the country and its people; they suppose that any studies of this kind tend to divert attention from the continuous desk work, the compilation of statistical reports which they consider the main duty of the civilian, or the supervision of his men which is the business of the soldier. With this is combined the impression that men of genius are out of place in the Indian bureaucracy, which prefers the safe person, who meekly follows the codes and circulars of the Revenue Board, to one who is disposed to raise awkward questions and inquire into matters beyond the narrow range of official duties. Hence the scientific inquirer, the linguist, naturalist, or anthropologist, rests under a certain suspicion that he is neglecting his real duties.

Fortunately, the present political situation is tending to modify this old-fashioned official view, and it is becoming obvious that the Government servant needs, above all things, an insight into the little-known beliefs and prejudices of the peasantry, while an officer destitute of scientific training, with no interest in the country and its development, is an unprofitable servant. It may reasonably be suspected that many of the present difficulties in Bengal are due to a fact which Sir A. Frazer mentions incidentally, without apparently realising its importance—that junior officers in Bengal fail to master the vernaculars of the people because most of their work on municipal and other boards is done in association with native gentlemen who prefer that the business should be conducted in English.

In spite of this lack of cooperation on the part of the official classes, the out-turn of the society's work for the past year is excellent. Dr. Annandale continues his studies of the fresh-water fauna, discussing the little-known Polyzoa which are found in fresh and brackish pools, with some undescribed fresh-water sponges from Calcutta and other parts of the country. He also deals with a specimen, recently discovered by accident in the museum, of that rare cat, *Felis tristis,* and Major Anderson describes *Breynia Vredenburgi,* a new Echinoid from the Indian Ocean. Botany is represented by Mr. Burkill's notes on the pollinisation of Indian flowers, with a special account of *Gentiana coronata.* In the zoological field Lieut.-Colonel Phillot deals with various varieties of falcons, and translates the chapters on hunting dogs and cheetas from an Arabic treatise on falconry of the tenth century. The chemical laboratory of the Presidency College contributes notes on a new way of preparing mercurous iodide, and on nitro-ethane as a solvent of iodoform.

The anthropological and numismatic supplements are as interesting as usual, and the materials collected in the late Tibetan expedition are being worked up by Rai Sarat Chandra Das and other native scholars.

The society also continues its useful series of independent memoirs. M. M. A. Gruvel contributes a learned monograph on "Cirrhipèdes operculés de l'Indian Museum de Calcutta," and Mr. E. R. Watson discusses the fastness of the indigenous dyes of Bengal. On the ethnographical side Mr. E. H. C. Walsh contributes a paper on the coinage of Tibet, and Dr. Annandale and Lieut.-Colonel Phillott, in the second part of their "Miscellanea Ethnographica," deal with Malayan weapons and the plan of a Persian gentleman's house. The most important contribution to this department is the monograph by Mr. R. B. Bainbridge on the Saorias of the Rajmahal Hills. These are but an isolated fragment of a widely-spread broken tribe found in Orissa, Chota Nagpur, Western Bengal, Madras, and the Central Provinces. The author speaks rather vaguely of their ethnical character. He seems to identify them with the Malé, and he adds that the Santals call them Munda and the Hindus Paharia or hillmen. He notes that they combine, as many Dravidians do, a high nasal index with dolichocephaly, but, in opposition to Sir H. Risley, he endeavours to distinguish them from typical Dravidians, like the Santals and Oraons, and suggests that among the Saorias the original Dravidian type has become modified by admixture with Aryan blood. But considering the isolation of their territory from the plains of Bengal, cross-breeding with high-caste Hindus does not seem probable. The author is obviously well acquainted with the people whom he describes, but his lack of literary skill and of anthropological training makes his memoir disappointing in comparison with the accounts of the same people by Sir H. Risley and Colonel Dalton. At the same time, he has collected much useful information on their social customs and religion which will furnish a basis for a full account of the tribe by some more competent writer.

THE CULLINAN DIAMOND.

THE Cullinan diamond, which the Transvaal Government, acting upon the proposition of the Prime Minister, General Botha, has recently decided to present to the King, was discovered at the Premier Mine near Pretoria, in the Transvaal, on January 25, 1905. The stone was found projecting from the side of the open-working or excavation in the "pipe" area about 18 feet from the surface. After a preliminary cleaning it was found to weigh $3024\frac{3}{4}$ carats, or 1·37 lb. avoirdupois; consequently it is more than three times the weight of the largest diamond previously known—the famous stone found in 1893 at Jagersfontein, in the Orange River Colony, which weighed 972 carats. A few days after its discovery the stone was examined and measured by Dr. F H. Hatch and Dr. G. S. Corstorphine, who published a description of it in the Transactions of the Geological Society of South Africa (vol. viii., pp. 26–7, 1905) and in the *Geological Magazine* (April, 1905, pp. 170–2).

N Hatch

According to this description the stone measures 4 by $2\frac{1}{2}$ by 2 inches. It is bounded by eight surfaces; four of these are faces of the original octahedral crystal, and four are cleavage faces parallel to the octahedron. Evidently the stone is a portion only of the original crystal, which had the shape of a distorted octahedron. The original octahedral faces are distinguished by typical striations, the bands varying in width from 0·1 to 0·4 centimetre, by mammillations and by triangular pittings, like deeply-etched figures, the largest of which has a side of 0·65 cm. On the other hand, the cleavage surfaces are characterised by greater smoothness and consequently by a more perfect reflection of light. Parallel to the largest cleaved surface there is an air layer between two internal cleavages, producing a "rainbow" or Newton rings.

The crystal is of remarkable purity. Two spots are visible, one on the surface, the other about 1 cm. within the crystal. The colour approximates to a blue-white. The stone was named after the chairman of the Premier Diamond Company. It is the joint property of the company and of the Transvaal Government, the latter being entitled to a share in the profits made by the company.

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